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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,297	03/26/2001	Joan Maria Boixadera Ferrer	202841US2PCT	4777
22850	7590	12/02/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PATEL, ISHWARBHAI B	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/762,297

Applicant(s)

BOIXADERA FERRER, JOAN MARIA

Examiner

Ishwar (I. B.) Patel

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-11, 13-22 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date September 7, 2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Drawing***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "a pad extending from a side of the first conducting track", claimed in claim 21 and 22, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The disclosure is objected to because of the following informalities: Title of the application to be changed to reflect the invention.

Appropriate correction is required.

***Claim Objections***

3. Claim 20 is objected to because of the following informalities: Claim 20 is depending upon claim 3, which seems a typographical mistake. It appears claim 20 is depending upon claim 14.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 3-10, 13-18 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatada, US Patent No. 4,749,120.

Regarding claim 3, Hatada discloses a circuit, comprising:  
a substrate (18, figure 1A-B); a first conducting track (20, figure 1A-B) on the substrate;

Art Unit: 2841

a second conducting track (20, figure 1A-B) on the substrate, wherein the second conducting track is spaced from the first conducting track so as to form an opening between the first conducting track and the second conducting track (figure 1A-B); an electrical component (10, figure 1A-B) bridging the opening, the electrical component comprising: an electrical part (main body of 10, figure 1A-B); a first conducting part (12, figure 1A-B); and a second conducting part (12, figure 1A-B); wherein the first conducting part is electrically coupled to the first conducting track and the second conducting part is electrically coupled to the second conducting track (figure 1B); and wherein the first conducting track extends beyond the first conducting part to a position under the electrical part (figure 1B).

Regarding claim 4, Hatada further discloses the electrical part is between the first conducting part and the second conducting part, (figure 1B).

Regarding claim 5, Hatada further discloses the circuit is a printed circuit Board (wiring board 16, column 3, line 38).

Regarding claim 6, Hatada further discloses the first and second conducting tracks are printed on the substrate. It is to be noted here that the applicant has not specifically defined "conducting tracks are printed on the substrate", except printed circuit board 10 with copper track 12, specification page 2, line 26-27, the examiner considered the printed circuit board means the circuit board made by

Art Unit: 2841

conventional method of plating / etching of the conductive material on board. Further, printed circuit board and printed wiring board are interchangeably used in the art, therefore, the wiring board of Hatada is considered as printed circuit board.

Regarding claim 7, Hatada further discloses an adhesive (22, figure 1A-B) on the first conducting track, the adhesive adhering the electrical component to the first conducting track.

Regarding claim 8, Hatada further discloses the adhesive directly adheres the electrical part of the electrical component to the first conducting track (figure 1A-B).

Regarding claim 9, Hatada further discloses the electrical part includes circuitry between the first conducting part and the second conducting part (semiconductor device 10, figure 1A-B, inherently have the internal circuitry), the first and second conducting parts (12, figure 1A-B) being electrical leads to the circuitry.

Regarding claim 10, Hatada further discloses the first and second conducting tracks are copper or aluminum (column 3, line 45-45).

Regarding claim 13, Hatada further discloses the distance from an outer edge of the first conducting part to an inner edge of the first conducting part where the first conducting part meets the electrical part of the electrical component, is less than

Art Unit: 2841

distance from the outer edge of the first conducting part to an inner edge of the first conducting track facing the opening (figure 1A-B).

Regarding claim 14, Hatada discloses all the features of the claimed invention, including an adhesive of the first conducting track, the adhesive adhering the electrical component to the first conducting track, as applied to claim 3 and 7, above.

Regarding claim 15, Hatada further discloses all the features of the claimed invention, including the electrical part is between the first conducting part and the second conducting part, (figure 1B), as applied to claim 4 above.

Regarding claim 16, Hatada further discloses all the features of the claimed invention; including the circuit is a printed circuit board, as applied to claim 5 above.

Regarding claim 17, Hatada further discloses all the features of the claimed invention, including the first and second conducting tracks are printed on the substrate as applied to claim 6 above.

Regarding claim 18, Hatada further discloses all the features of the claimed invention, including the electrical part includes circuitry between the first conducting part and the second conducting part, the first and second conducting parts being electrical leads to the circuitry, as applied to claim 9 above.

Regarding claim 20, Hatada further discloses all the features of the claimed invention, including the distance from an outer edge of the first conducting part to an inner edge of the first conducting part where the first conducting part meets the electrical part of the electrical component, is less than distance from the outer edge of the first conducting part to an inner edge of the first conducting track facing the opening, as applied to claim 13 above.

Regarding claim 21, Hatada discloses all the features of the claimed invention, including the first conducting track comprises a pad extending (area of the track 20 connected with the electrode pad 12 is a pad, see figure 1B) from a side of the first conducting track facing the opening and an adhesive on pad, the adhesive adhering the electrical component to the first conducting track, as applied to claim 3 and 7 above.

Regarding claim 22, Hatada further discloses all the features of the claimed invention, including the pad extend under the electrical part; see figure 1B.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



Art Unit: 2841

7. Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatada, as applied to claims 3-10, 13-18 and 20-22 above, and further in view of Saitoh et al., US Patent No. 6,175,084.

Regarding claims 11 and 19, the applicant is further claiming the thickness of the first conducting track greater than 105 microns.

Hatada is silent about the thickness of the conductor.

Saitoh et al., discloses a multiplayer substrate with circuit conductor layer having a thickness of 5 to 150  $\mu\text{m}$ , example 10, example 11, column 16-17 and claim 6. Further, the thickness of the conductor will be selected based on the desired current carrying capacity. For higher current carrying capacity, the thicker conductor and for lower current, the thinner conductor. A person of ordinary skill in the art will select the thickness of the conductor depending upon the required current carrying capacity with a lower line loss.

Therefore, it would have been obvious to a person ordinary skill in the art at the time of applicant's invention to provide the conductor of Hatada with a greater than 105 micron, as taught by Saitoh et al., as claimed in claim 11 and 19, in order to have lower line loss with high current carrying capacity.

#### ***Allowable Subject Matter***

8. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The limitation "wherein an inner edge of the second conducting track facing the opening is substantially aligned with the inner edge of the second conducting part of the electrical component, which also faces the opening", together with other claimed limitations, has not been disclosed or suggested by the prior art.

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 3-22 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tanaka, US Patent No. 5,363,277, discloses a structure with a semiconductor device mounted on a substrate, see figure 4.

Nagai et al., US Patent No. 5,532,762 discloses a multilayer printed circuit board with wiring pattern thickness from about 50 to 200  $\mu\text{m}$ , column 9, line 39-42.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2841

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

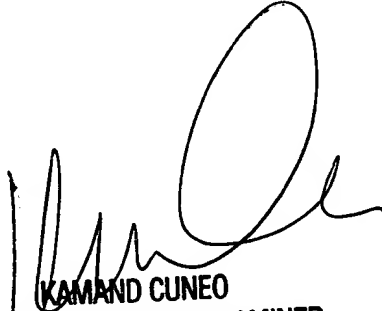
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (571) 272 1933. The examiner can normally be reached on M-F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272 1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I B Patel  
Examiner  
Art Unit: 2841  
November 28, 2004



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